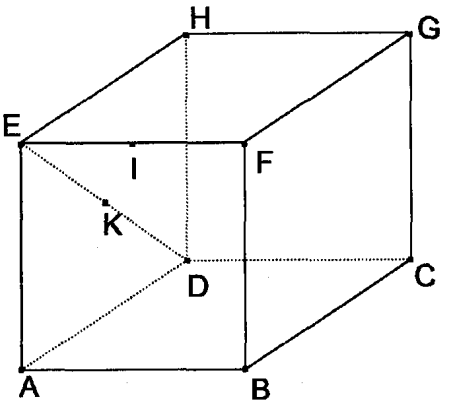
Ex 19 :



$I = E * F \quad , K = A * H = D * E$

1) a)

$A(0,0,0)\ ; B(1,0,0)\ ; G(1,1,1); K(0,\frac{1}{2},\frac{1}{2})\ ; I(\frac{1}{2},0,1)$

$$\overrightarrow{IG}\begin{pmatrix}\frac{1}{2}\\1\\0\end{pmatrix};\overrightarrow{IA}\begin{pmatrix}-\frac{1}{2}\\0\\-1\end{pmatrix};\overrightarrow{BK}\begin{pmatrix}-1\\\frac{1}{2}\\\frac{1}{2}\end{pmatrix}$$

$$\overrightarrow{IG}\wedge\overrightarrow{IA}\begin{pmatrix}-1\\\frac{1}{2}\\\frac{1}{2}\end{pmatrix}=\overrightarrow{BK}$$

b) $aire(IGA)=\frac{1}{2}\left\|\overrightarrow{BK}\right\|=\frac{\sqrt{6}}{4}\ (u.a)$

2)

$$\overrightarrow{IB}\begin{pmatrix}\frac{1}{2}\\0\\-1\end{pmatrix}$$

$$V=\frac{1}{6}\left|\left(\overrightarrow{IG}\wedge\overrightarrow{IA}\right).\overrightarrow{IB}\right|=\frac{1}{6}\left|\overrightarrow{BK}.\overrightarrow{IB}\right|=\frac{1}{6}\left|-\frac{1}{2}+0-\frac{1}{2}\right|=\frac{1}{6}(u.v)$$

Qarray.tn -Aqra Blech- Qarray.tn